

ART 34 AMDT

CLAIMS

1. Highly manoeuvrable aircraft with aerostatic lift, characterised in that it comprises a structure, which includes at least two non-rigid spindle-shaped elements side by side (11), joined by at least one connecting element (12), said aircraft also being provided with a movement and control system with a set of several electric motors, of which at least one is adjustable with rotation around an axis perpendicular to the rotation axis of said motor, each of which drives a propeller (13) with fixed or variable pitch, <—>.

2. Aircraft with aerostatic lift as in claim 1, characterised in that it consists of an airship (10), which can be piloted or radio-controlled, without deflecting aerodynamic control surfaces and sustained by helium.

3. Aircraft with aerostatic lift as in claim 1, characterised in that it comprises pressurised structural elements appropriately assembled inside said connecting element (12) between the two spindle-shaped elements (11).

4. Aircraft with aerostatic lift as in claim 1, characterised in that said control system is fly-by-wire and completely automatic, according to which

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< at least one of this propeller (13) is mounted on  
5 vertical arm (14) extending from the connecting element  
(12), disposed at a distance from the whole body centre  
of gravity. >

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piloting is performed by means of a helicopter type controls with a throttle lever, a stick and a group control, said automatic control system being suitable for transferring the appropriate commands to the motors  
5 in order to perform the required manoeuvres.

5. Aircraft with aerostatic lift as in claim 2, characterised in that said airship (10) has a configuration with five or six motors, the first four of which are used for forward flight for the  
10 longitudinal, directional and lateral control, and the fifth and sixth motor are used for rapid ascent and descent.

6. Aircraft with aerostatic lift as in claim 4, characterised in that said first four motors are  
15 provided with propeller discs on vertical planes and are fitted on arms (14) having a vertical axis, while said fifth and sixth motor, with horizontal propeller disc and invertible thrust direction, are fitted in a central position between said two spindle-shaped  
20 elements (11).

7. Aircraft with aerostatic lift as in claim 2, characterised in that said airship (10) has a configuration with four motors, two of which are used for forward flight and directional control and the

other two for rapid ascent and descent and longitudinal control.

8. Aircraft with aerostatic lift as in claim 7, characterised in that said first two motors, with  
5 propeller discs on vertical planes, are fitted on a horizontal transverse bar, arranged at the sides of the gondola, and are used for directional control of the aircraft, while the other two motors, having horizontal propeller disc with invertible thrust direction, are  
10 fitted in a central position between said two spindle-shaped elements (11).

9. Aircraft with aerostatic lift as in claim 2, characterised in that said airship (10) is provided with ballonets system (15), at least one for each  
15 spindle-shaped element (11), in order to vary the altitude within a pre-set range without loss of gas, said ballonets (15) being intercommunicating like the volumes of gas of said spindle-shaped elements (11).

10. Aircraft with aerostatic lift as in claim 2,  
20 with a ballonets system characterised in that for each hull during the climbing phase, ballonets deflate progressively, from the outer to the central sector and during the descent phase, ballonets inflate progressively from the central to the outer sectors.

11. Aircraft with aerostatic lift as in claim 9, characterised in that said ballonets (15) communicate by means of a first duct (16), provided with two controlled single-acting valves (17), while said  
5 spindle-shaped elements (11) communicate by means of a second duct (18) provided with a first controlled single-acting valve (19) and a second single-acting valve (20), coupled with an aperture for inflating said spindle-shaped elements (11), said ballonets (15) being  
10 kept pressurised by a third single-acting valve (21), at the inlet of which a dynamic intake is provided (23), provided with inflation aperture, and a compressor (22).

12. Aircraft with aerostatic lift as in claim 1,  
15 characterised in that it features a couple of retractile landing devices formed by rods properly connected by sliding screws, which are almost adherent to the envelopes during the flight, while are moved outward for landing